

# VOC long-term online measurements using a PTR-Quad-MS at SIRTAs station (Paris region, France)

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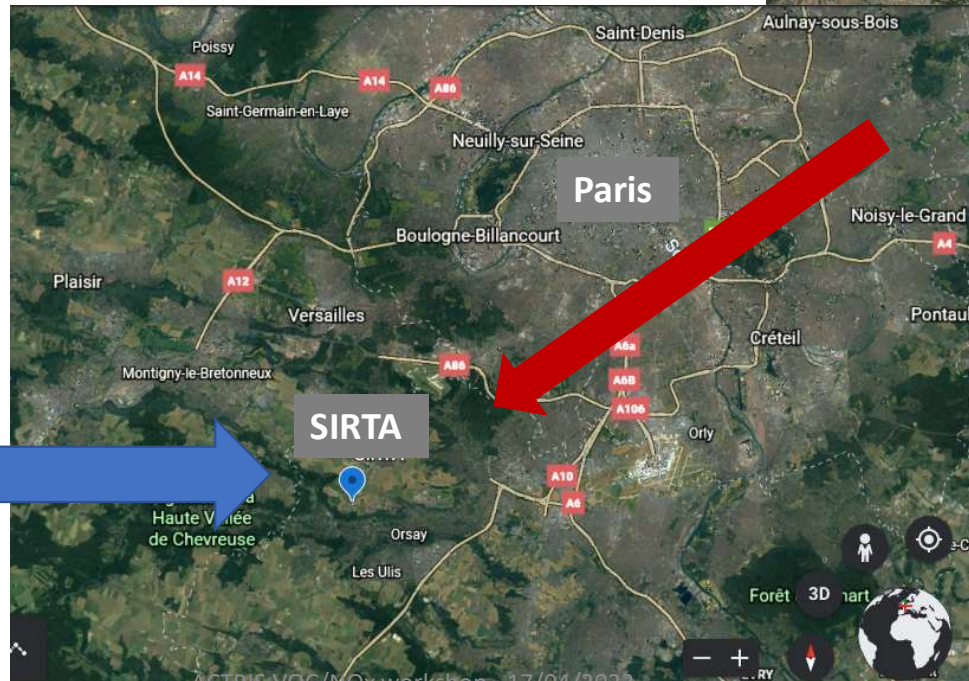
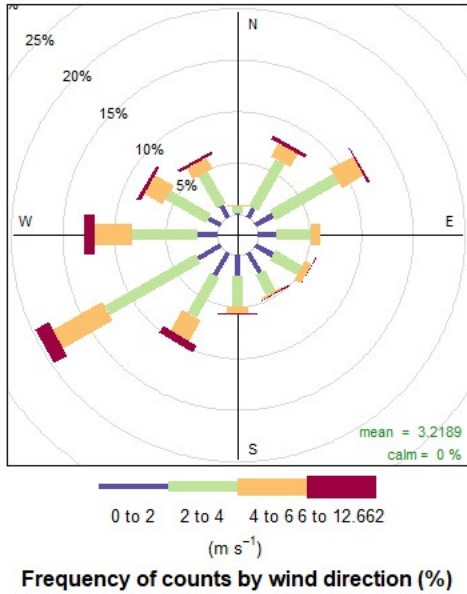
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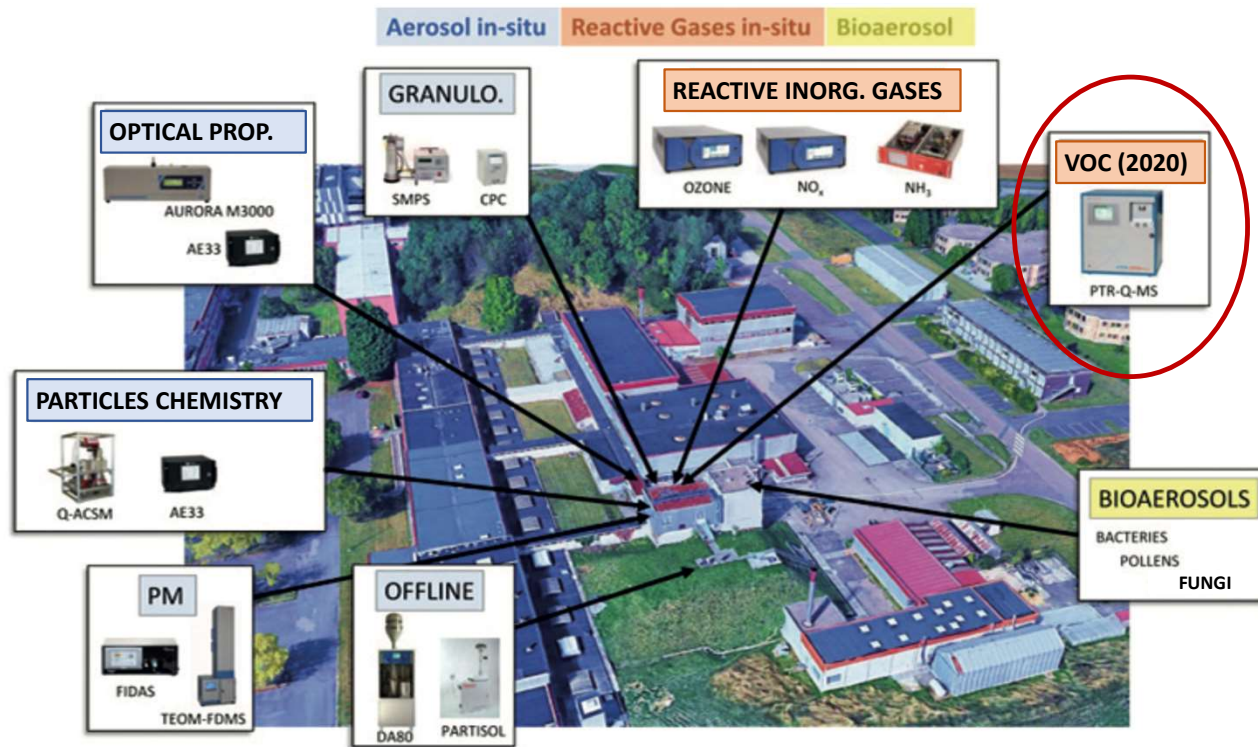
# Site presentation



Regional background

Continental & Paris metropole

# Station presentation



# Sampling conditions



mass	compound(s)	mass	compound(s)	mass	compound(s)	mass	compound(s)
31	Formaldehyde	58	Allylamine	75	Methylacetate	99	Furandione
33	<b>Methanol</b>	59	<b>Acetone</b>	79	<b>Benzene</b>	107	<b>C8-Aromatics</b>
42	<b>Acetonitrile</b>	60	Trimethylamine	81	<b>MTs' fragments</b>	111	Benzenediol
45	<b>Acetaldehyde</b>	61	Acetic acid	83	Methylfuran	121	Trimethylbenzene
46	Ethylamine/NO <sub>2</sub> <sup>+</sup>	63	<b>DMS</b>	85	Methylbutenone	137	<b>Monoterpenes</b>
47	Ethanol/Formic acid	69	<b>Isoprene/Furan</b>	87	Butandione	139	Nopinone
57	<b>Propenal</b>	71	<b>MVK/butenal</b>	93	<b>Toluene</b>	147	<b>Dichlorobenzene</b>
		73	<b>MEK/butanone</b>	97	Furfural	151	

Submitted mz (2022)

**Compounds calibrated w/ standard mixture**

Biogenic compounds 

Traffic markers 

Wood burning markers 

## PTR-Q-MS parameters:

- Measurements started on 17 January 2020
- Sampling line in Teflon heated at 50°C
- T° inlet: 60°C, T° drift: 60°C
- E/N: 134.4 Td

## Analysis parameters & quality assurance:

- Resolution time: 3 min then 6 min (changed in December 2020)
- Blanks: 1 h every 13 h (2020 & 2021) – **40 min every 6 h (2022)**
- Calibration: once a month – **using NPL standard from March 2022**
- Target measurements once a week
- Regular data check and flagging

# Overview VOC measurements in 2020-2021

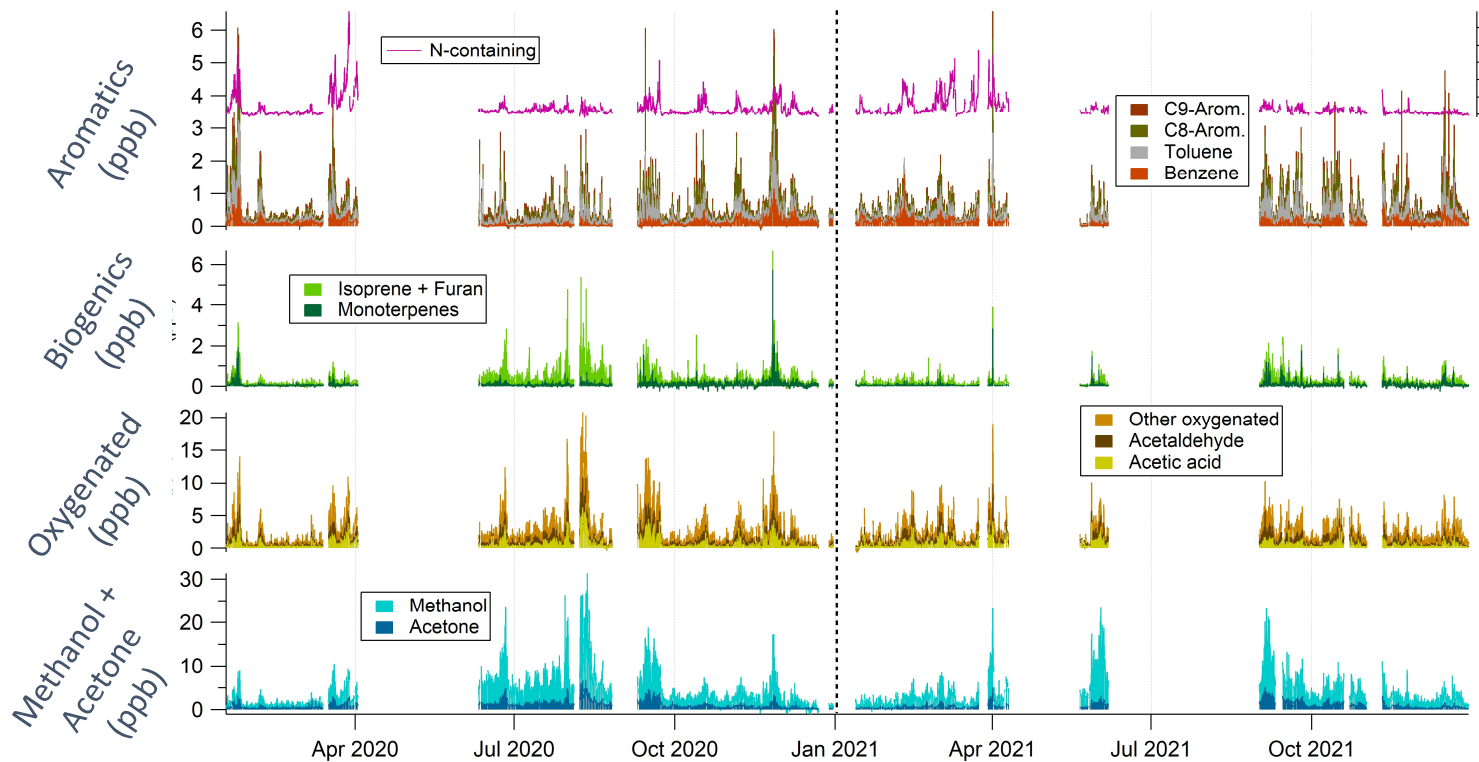
Simon et al (in press)

<https://doi.org/10.5194/essd-2022-406>  
 Preprint. Discussion started: 5 December 2022  
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Earth System  
 Science  
 Data

Two years of Volatile Organic Compounds online in-situ measurements at SIRT A (Paris region, France) using Proton-Transfer-Reaction Mass Spectrometry

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N-VOCs (ppb)

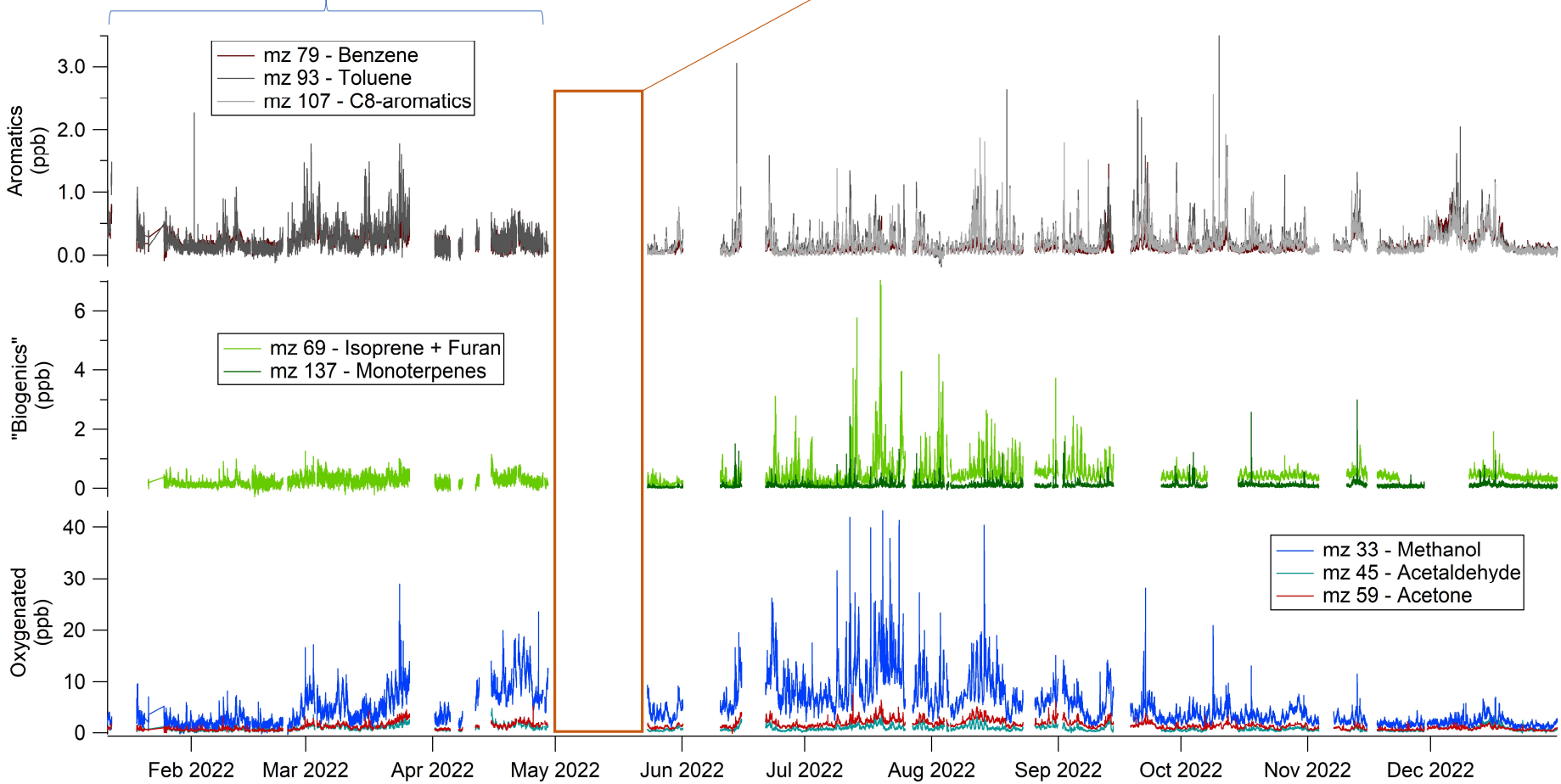
Increase of aromatics and some oxygenated in winter (local sources, low boundary layer)

Increase of isoprene, methanol and acetone in summer (biogenic source, photochemistry)

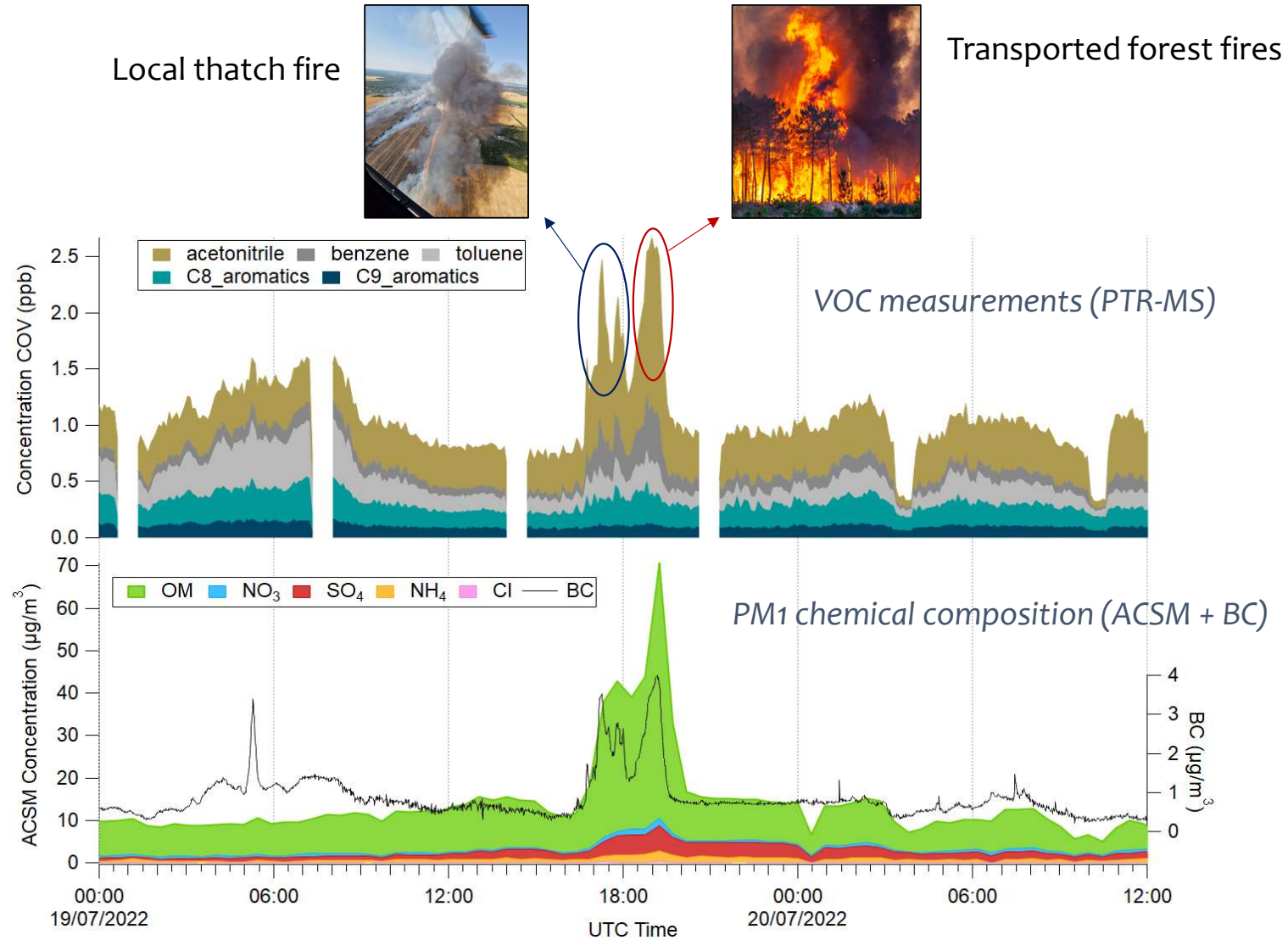
# Overview VOC measurements in 2022

m/z > 100 invalidated due to low sensitivity

Important maintenance at Ionicon  
→ drastic improvement of PTR-MS sensitivity



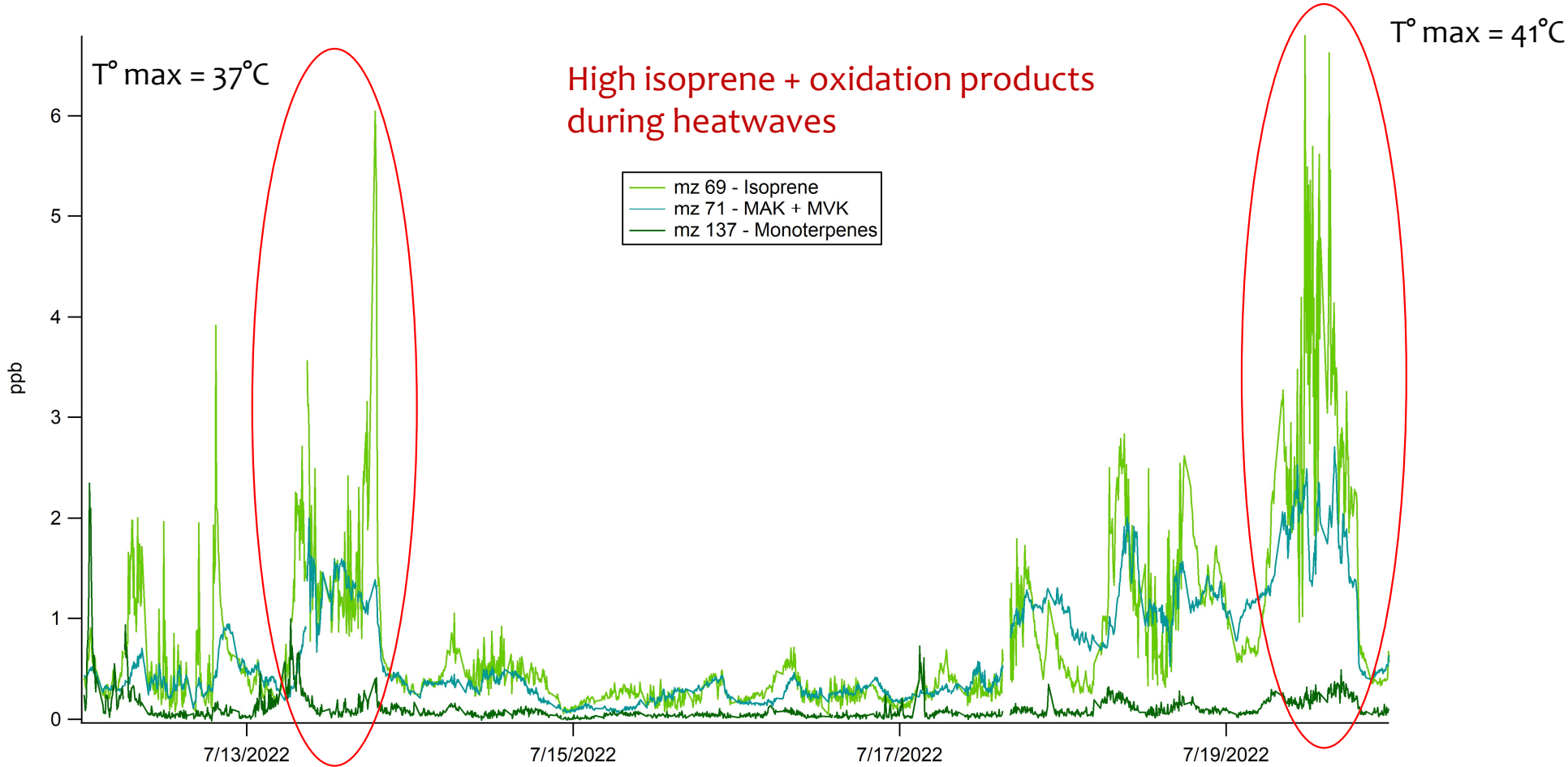
# Focus summer 2022 – fires



J.-E. Petit et al

ACTRIS VOC/NO<sub>x</sub> workshop - 17/04/2023

# Focus summer 2022 – EMEP week





## Perspectives in 2023

- EMEP campaign: GC C2C6 data to be submitted soon!
- Blank duration increased back to 1 hour
- Data treatment was re-developed for 2022 data and is being improved

→ Near-real-time treatment implementation as part of CAMS



## Acknowledgements

We thank Nicolas Pascal (AERIS) for helping with data submission